UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,191	06/20/2005	Sonja Salmon	10357.504-US	1166

25908 7590 01/09/2009

NOVOZYMES NORTH AMERICA, INC.
500 FIFTH AVENUE
SUITE 1600
NEW YORK, NY 10110

EXAMINER	
KHAN, AMINA S	

ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
01/09/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/540,191	SALMON ET AL.	
	Examiner	Art Unit	
	AMINA KHAN	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *62-84* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *62-84* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to applicant's amendments filed on October 3, 2008.

2. Claims 62-84 are pending. Claims 1-61 have been cancelled.

3. All prior rejections are withdrawn in view of applicant's cancellation of the claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 62-67,70-78,83 and 84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baeck et al. (US 6,077,818) in view of Sando et al. (US 3,481,684).

Regarding the claimed carbohydrate oxidase substrate, Baeck et al. teach laundry detergent composition comprising oxidases and a glucose substrate which may be utilized for hydrogen peroxide production by means of glucose oxidase. Suitable oxidases include those which act on aromatic compounds such as phenols and related substances. Other suitable oxidases are urate oxidase, galactose oxidase, alcohol oxidases, amine oxidases, amino acid oxidase, amyloglucosidase, and cholesterol oxidase. See col.8,ln.55-65. Baeck et al. teach that any reducing saccharide containing 5 or 6 carbon atoms can be used, e.g., glucose, galactose and galactosyl moieties can be substituted for the glucosyl moieties. See col.11,ln.3-4.

Regarding the claimed fatty acid oxidizing enzyme, Baeck et al. teach laundry detergent composition comprising lipoxygenases (col.16,ln.30). Baeck et al. teach that the above-mentioned enzymes may be of any suitable origin, such as vegetable, animal, bacterial, fungal and yeast origin. Said enzymes are normally incorporated in the detergent composition at levels from 0.0001% to 2% of active enzyme by weight of the detergent composition. See col.17,ln.5-15.

In col.23,ln. Baeck et al. teach the pH of the treatment solution is preferably from 7 to 11, especially from 7.5 to 10.5. Highly preferred pH is between 9 to 10.5. See col.24,ln.2-4.

In example 2,col.26, Baeck et al. illustrate cotton/polycotton fabrics washed in a wash liquor of pH 9.5, the wash liquor comprising 2.6% glucose amide substrate, and 1.8% protease, lipase, and amylase enzymes, and a source of hydrogen peroxide derived from perborate monohydrate. See table of example 2 and col.26,ln.33-41.

Baeck et al. do not specifically teach the U/ml concentration of the carbohydrate oxidase and methods of scouring or post bleaching alkaline treatment.

Sando et al. teach it is conventional to scour, bleach and then alkaline treat cotton and cellulosic fabrics, wherein the alkaline treatment is carried out with hydrogen peroxide at pH about 9-11 and temperature of 85-90ºC (column 3, lines 50-65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods of Baeck et al. by incorporating the pre-scouring and post bleaching alkaline method steps because Sando et al. teach the importance of these steps in refining and bleaching cellulosic textiles.

It is noted that there is no requirement that such a condition has to be met for a proper 103 rejection. According to case law bearing on this point, the issue is what one of ordinary skill in the art would learn from a reference's disclosure when considered as a whole. In re Courtright, 377 F.2d 647, 153 USPQ 735, 739 (CCPA 1967). In view of that it would therefore have been obvious to one of ordinary skill in the art, at the time the invention was made, to arrive at the claimed detergent comprising carbohydrate oxidase, as recited by the instant claims, because, Baeck et al. motivate one of ordinary skill to formulate a textile detergent composition with suitable oxidases such as galactose oxidase in an amount from 0.0001% to 2% of active enzyme by weight of the detergent composition. This concentration of enzyme in U/ml would be considered a result effective variable and would influence the bleaching properties of the detergent, therefore optimization of this critical variable for maximal bleaching would only require routine skill in the art.

Also, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to arrive at the claimed detergent comprising lipoxygenase fatty acid oxidizing enzymes, because, Baeck et al. motivate one of ordinary skill to formulate a textile detergent composition with lipoxygenases in an amount from 0.0001% to 2% of active enzyme by weight of the detergent composition.

Finally, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to arrive at the claimed detergent comprising both the carbohydrate oxidase and lipoxygenase fatty acid oxidizing enzyme in a method of treating fabric, because, Baeck et al. motivate one of ordinary skill to formulate a textile detergent composition with suitable oxidases such as galactose oxidase and lipoxygenases in an amount from 0.0001% to 2% of active enzyme by weight of the detergent composition.

6. Claims 68 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baeck et al. (US 6,077,818) in view of Sando et al. (US 3,481,684) and further in view of Schneider et al. (US 6,165,761).

Baeck et al. and Sando et al. are relied upon as described in paragraph 6.

Baeck et al. do not teach the claimed origin of the carbohydrate oxidase.

Schneider et al. teach a novel carbohydrate oxidase having the capability to oxidize maltodextrins and cellodextrins more efficiently than glucose may be obtained from a strain of Microdochium, particularly M. nivale. See abstract. Schneider et al.

further teach the use of these oxidases as components of laundry detergents to produce hydrogen peroxide(column 20, lines 25-40).

It would have been obvious to one of ordinary skill in the art to derive the claimed carbohydrate oxidase from a strain of Microdochium nivale, since Schneider et al. teach carbohydrate oxidase derived from Microdochium nivale is commonly known and of benefit in producing hydrogen peroxides in detergents. One of ordinary skill would have been motivated to combine the teachings of Baeck et al. and Sando et al. with that of Schneider et al. since the references teach the utility of a glucose oxidase, a pyranose oxidase, a lipoxygenase, an L-amino acid oxidase or additional carbohydrate oxidase, which may be of microbial (bacterial, yeast or fungal) origin and may be obtained by techniques conventionally used in the art.

7. Claim 79 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baeck et al. (US 6,077,818) in view of Sando et al. (US 3,481,684) and further in view of Sugio et al. (CA2444735).

Baeck et al. and Sando et al. are relied upon as described in paragraph 6.

Baeck et al. do not teach the claimed origin of the lipoxygenase as recited by the instant claim 49.

Sugio et al. teach fungal lipoxygenase derived from Magnaporthe salvinii is useful in baking and in a detergent. See abstract.

Thus, it would have been obvious, to one of ordinary skill in the art, at the time the invention was made to derive the claimed lipoxygenase from a strain of

Magnaporthe salvinii since Sugio et al. teach fungal lipoxygenase derived from Magnaporthe salvinii is useful in baking and in a detergent. One of ordinary skill would have been motivated to combine the teachings of Baeck et al. and Sando et al. with that of Sugio et al. since the references teach the utility of lipoxygenase conventionally used in the art of detergent compositions.

8. Claims 80-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baeck et al. (US 6,077,818) in view of Sando et al. (US 3,481,684) and further in view of Hage et al. (US 2003/0166485).

Baeck et al. and Sando et al. are relied upon as described in paragraph 6.

Baeck et al. do not teach the claimed concentration of fatty acid oxidizing enzyme or linoleic acid substrate.

Hage et al. teach bleaching systems comprising linoleic acid as a substrate for lipoxygenase for the benefit of removing stains and bleaching fabrics in detergent compositions and for treating cottons (paragraphs 0057, 0059, 0069, 0070 and 0092). Hage et al. further teach the use of 5000-1000000 U lipoxygenase per gram detergent (paragraph 0057).

Thus, it would have been obvious, to one of ordinary skill in the art, at the time the invention was made to incorporate linoleic acid as a substrate for lipoxygenase because it is taught as conventional by Hage for detergents used to treat and bleach cotton. One of ordinary skill would have been motivated to combine the teachings of Baeck et al. and Sando et al. with that of Hage et al. since the references teach the

utility of lipoxygenase/linoleic combinations conventionally used in the art of detergent compositions.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **AMINA KHAN** whose telephone number is (571)272-5573. The examiner can normally be reached on Monday through Friday, 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lorna M Douyon/
Primary Examiner, Art Unit 1796

/Amina Khan/

Examiner, Art Unit 1796

January 5, 2009